

09 - Springs

April 17, 2024

0.0.1 An engineering problem from “Engineering Optimization” by Xin-She Yang

Goal: Design an optimal spring (cheapest / least material needed) that does the job. Parameters we can change: d , the diameter of the coil; L , the length of the spring; w , the thickness of the wire.

Task: Minimize

$$(2 + L)dw^2$$

subject to the constraints

$$g_1(L, d, w) = 1 - \frac{d^3 L}{7178 w^4} \leq 0$$

$$g_2(L, d, w) = \frac{4d^2 - wd}{12566dw^3 - w^4} + \frac{1}{5108w^2} - 1 \leq 0$$

$$g_3(L, d, w) = 1 - \frac{140.45w}{d^2 L} \leq 0$$

$$g_4(L, d, w) = \frac{w + d}{1.5} - 1 \leq 0$$

with boundary conditions

$$0.05 \leq w \leq 2.0$$

$$0.25 \leq d \leq 1.3$$

$$2.0 \leq L \leq 15.0$$

```
[ ]: import math
import random
```

```
[ ]: def random_in_range(lower, upper):
    return random.random() * (upper - lower) + lower
random_in_range(2, 15)
```

```
[ ]: 2.0116314006633185
```

```
[ ]: def g1(L,d,w):
    return 1 - d**3 * L / (7178 * w**4)

def g2(L,d,w):
    return (4*d**2 - w*d)/(12566 * d * w**3 - w**4) + 1/(5108*w**2) - 1

def g3(L,d,w):
    return 1 - 140.45 * w / (d**2*L)
```

```

def g4(L,d,w):
    return (w+d)/1.5 - 1

def satisfies_constraints(L,d,w):
    return g1(L,d,w) <= 0 and g2(L,d,w) <= 0 and g3(L,d,w) <= 0 and g4(L,d,w) <= 0

```

```
[ ]: satisfies_constraints(*[14.58629717, 0.07341016, 0.0299435 ])
```

```
[ ]: False
```

```
[ ]: L, d, w = [14.68629717, 0.07341016, 0.0299435]
g1(L,d,w), g2(L,d,w), g3(L,d,w), g4(L,d,w)
```

```
[ ]: (-0.006855439166644661,
-2.3389332648449113e-07,
-52.13732073627852,
-0.93109756)
```

```
[ ]: def score(L,d,w): # w-squared is "w**2" not "w^2"
    return (2+L)*d*w**2
```

```
[ ]: def tweak(L,d,w):
    # new_w = old_w + a number between -delta_w and +delta_w

    delta_w = 0.01
    delta_d = 0.01
    delta_L = 0.1

    new_w = w + random_in_range(-1, 1) * delta_w
    while new_w < 0.05 or new_w > 2:
        new_w = w + random_in_range(-1, 1) * delta_w

    new_d = d + random_in_range(-1, 1) * delta_d
    while new_d < 0.25 or new_d > 1.3:
        new_d = d + random_in_range(-1, 1) * delta_d

    new_L = L + random_in_range(-1, 1) * delta_L
    while new_L < 2 or new_L > 15:
        new_L = L + random_in_range(-1, 1) * delta_L

    return (new_L, new_d, new_w)

tweak(15, 1.3, 2.0)
```

```
[ ]: (14.990587393577437, 1.290393908302358, 1.990592195970753)
```

```
[ ]: def random_solution():
    return (
        random_in_range(2, 15),
        random_in_range(0.25, 1.3),
        random_in_range(0.05, 2),
    )
print(random_solution())
```

(6.173509817073723, 0.6703061072447234, 1.8972620984245134)

```
[ ]: # what does the * do
def test(num1, num2):
    return num1 + num2
L = [1,3]
test(*L)
```

[]: 4

[]:

[]:

[]:

```
[ ]: def hill_climbing():

    start = random_solution()
    while not satisfies_constraints(*start):
        # print("fail ", end="")
        start = random_solution()
    sol = start
    value = score(*sol)
    # print(sol, value)

    bad = 0
    while True:
        new_sol = tweak(*sol)
        while not satisfies_constraints(*new_sol):
            # print("fail ", end="")
            new_sol = tweak(*sol)
        new_value = score(*new_sol)
        if new_value < value:
            bad = 0
            sol = new_sol
            value = new_value
            # print(sol, value)

        else:
```

```

    bad += 1
    if bad > 1000:
        # print(value)
        return sol

```

[]:

```

[ ]: sol = hill_climbing()
      print(sol)

      # print(g1(*sol), g2(*sol), g3(*sol), g4(*sol))
      print(score(*sol))

```

(2.0081370046195417, 0.28215836682942713, 0.05004142068745657)
0.0028320098057205713

[]:

[]:

```

[ ]: # smarter: sample 1000 tweaks to find a good initial_temp that gives a desired
      ↪ p_0
      # or: heat the system slowly until the % of worsening solutions is what you want
      initial_temp = 0.005
      alpha = 0.99
      final_temp = initial_temp / 10000
      trials_per_temp = 10000

      start = random_solution()
      while not satisfies_constraints(*start):
          start = random_solution()
      sol = start
      value = score(*sol)

```

```

[ ]: temp = initial_temp
      generation = 0
      best_sol = None
      best_score = None

      while temp >= final_temp:
          generation += 1
          accepted_worse = 0
          total_worse = 0
          for i in range(trials_per_temp):
              new_sol = tweak(*sol)
              while not satisfies_constraints(*new_sol):
                  new_sol = tweak(*sol)

```

```

new_value = score(*new_sol)

delta = new_value - value
delta *= -1
if delta >= 0:
    sol = new_sol
    value = new_value
    if best_score is None or value < best_score:
        best_sol = sol
        best_score = value
else:
    total_worse += 1
    p = math.exp(delta/temp)
    r = random.random()
    if r <= p:
        accepted_worse += 1
        sol = new_sol
        value = new_value

print(
    f"Gen #{generation}: temp = {temp:.6f}, "
    f"best score = {best_score:.8f}, "
    f"cur score = {value:.8f}, "
    f"worse accepted = {round(accepted_worse/total_worse*100,2):.2f}%"
)
temp = temp * alpha

```

```

Gen #1: temp = 0.005000, best score = 0.00327325, cur score = 0.00496140, worse
accepted = 63.28%
Gen #2: temp = 0.004950, best score = 0.00327325, cur score = 0.00788659, worse
accepted = 65.36%
Gen #3: temp = 0.004901, best score = 0.00295824, cur score = 0.01637738, worse
accepted = 73.90%
Gen #4: temp = 0.004851, best score = 0.00295824, cur score = 0.02437785, worse
accepted = 70.61%
Gen #5: temp = 0.004803, best score = 0.00295824, cur score = 0.01333553, worse
accepted = 70.37%
Gen #6: temp = 0.004755, best score = 0.00295824, cur score = 0.01078134, worse
accepted = 73.38%
Gen #7: temp = 0.004707, best score = 0.00295824, cur score = 0.01590679, worse
accepted = 69.59%
Gen #8: temp = 0.004660, best score = 0.00295824, cur score = 0.00715232, worse
accepted = 73.66%
Gen #9: temp = 0.004614, best score = 0.00295824, cur score = 0.00673628, worse
accepted = 71.59%
Gen #10: temp = 0.004568, best score = 0.00295824, cur score = 0.00682861, worse

```

accepted = 72.24%
Gen #11: temp = 0.004522, best score = 0.00295824, cur score = 0.01020922, worse
accepted = 70.63%
Gen #12: temp = 0.004477, best score = 0.00295824, cur score = 0.01574060, worse
accepted = 70.37%
Gen #13: temp = 0.004432, best score = 0.00295824, cur score = 0.01019384, worse
accepted = 70.85%
Gen #14: temp = 0.004388, best score = 0.00295824, cur score = 0.00504831, worse
accepted = 68.45%
Gen #15: temp = 0.004344, best score = 0.00295824, cur score = 0.00946549, worse
accepted = 78.25%
Gen #16: temp = 0.004300, best score = 0.00295824, cur score = 0.02910859, worse
accepted = 65.27%
Gen #17: temp = 0.004257, best score = 0.00295824, cur score = 0.00637125, worse
accepted = 64.44%
Gen #18: temp = 0.004215, best score = 0.00295824, cur score = 0.01673758, worse
accepted = 72.08%
Gen #19: temp = 0.004173, best score = 0.00294800, cur score = 0.00711789, worse
accepted = 73.72%
Gen #20: temp = 0.004131, best score = 0.00294800, cur score = 0.00675503, worse
accepted = 69.69%
Gen #21: temp = 0.004090, best score = 0.00294800, cur score = 0.00834959, worse
accepted = 70.16%
Gen #22: temp = 0.004049, best score = 0.00294800, cur score = 0.01654227, worse
accepted = 67.52%
Gen #23: temp = 0.004008, best score = 0.00294800, cur score = 0.00653862, worse
accepted = 63.24%
Gen #24: temp = 0.003968, best score = 0.00294800, cur score = 0.00737217, worse
accepted = 74.73%
Gen #25: temp = 0.003928, best score = 0.00294800, cur score = 0.02220535, worse
accepted = 74.91%
Gen #26: temp = 0.003889, best score = 0.00294800, cur score = 0.00851493, worse
accepted = 56.19%
Gen #27: temp = 0.003850, best score = 0.00294800, cur score = 0.00911293, worse
accepted = 73.48%
Gen #28: temp = 0.003812, best score = 0.00294800, cur score = 0.00871987, worse
accepted = 66.83%
Gen #29: temp = 0.003774, best score = 0.00294800, cur score = 0.01549159, worse
accepted = 60.22%
Gen #30: temp = 0.003736, best score = 0.00294800, cur score = 0.01729499, worse
accepted = 54.24%
Gen #31: temp = 0.003699, best score = 0.00294800, cur score = 0.01536478, worse
accepted = 60.15%
Gen #32: temp = 0.003662, best score = 0.00294800, cur score = 0.01525190, worse
accepted = 70.85%
Gen #33: temp = 0.003625, best score = 0.00294800, cur score = 0.00814747, worse
accepted = 58.47%
Gen #34: temp = 0.003589, best score = 0.00294800, cur score = 0.01386915, worse

accepted = 55.09%
Gen #35: temp = 0.003553, best score = 0.00294800, cur score = 0.00735538, worse
accepted = 54.83%
Gen #36: temp = 0.003517, best score = 0.00294800, cur score = 0.00482576, worse
accepted = 61.96%
Gen #37: temp = 0.003482, best score = 0.00294800, cur score = 0.00381857, worse
accepted = 73.23%
Gen #38: temp = 0.003447, best score = 0.00294800, cur score = 0.00416553, worse
accepted = 73.87%
Gen #39: temp = 0.003413, best score = 0.00294800, cur score = 0.01066448, worse
accepted = 68.28%
Gen #40: temp = 0.003379, best score = 0.00294800, cur score = 0.01236449, worse
accepted = 68.12%
Gen #41: temp = 0.003345, best score = 0.00294800, cur score = 0.00819547, worse
accepted = 71.80%
Gen #42: temp = 0.003311, best score = 0.00294800, cur score = 0.00572987, worse
accepted = 70.80%
Gen #43: temp = 0.003278, best score = 0.00294800, cur score = 0.00646946, worse
accepted = 72.45%
Gen #44: temp = 0.003246, best score = 0.00293203, cur score = 0.00869171, worse
accepted = 66.83%
Gen #45: temp = 0.003213, best score = 0.00293203, cur score = 0.00833980, worse
accepted = 74.03%
Gen #46: temp = 0.003181, best score = 0.00293203, cur score = 0.00819482, worse
accepted = 66.68%
Gen #47: temp = 0.003149, best score = 0.00293203, cur score = 0.00641651, worse
accepted = 69.50%
Gen #48: temp = 0.003118, best score = 0.00293203, cur score = 0.00803066, worse
accepted = 67.88%
Gen #49: temp = 0.003086, best score = 0.00293203, cur score = 0.00593064, worse
accepted = 67.79%
Gen #50: temp = 0.003056, best score = 0.00293203, cur score = 0.01022080, worse
accepted = 70.18%
Gen #51: temp = 0.003025, best score = 0.00293203, cur score = 0.00590456, worse
accepted = 69.62%
Gen #52: temp = 0.002995, best score = 0.00293203, cur score = 0.00564999, worse
accepted = 68.45%
Gen #53: temp = 0.002965, best score = 0.00293203, cur score = 0.00540432, worse
accepted = 71.49%
Gen #54: temp = 0.002935, best score = 0.00293203, cur score = 0.00568868, worse
accepted = 71.92%
Gen #55: temp = 0.002906, best score = 0.00293203, cur score = 0.01180283, worse
accepted = 63.40%
Gen #56: temp = 0.002877, best score = 0.00293203, cur score = 0.00753343, worse
accepted = 63.40%
Gen #57: temp = 0.002848, best score = 0.00293203, cur score = 0.01068842, worse
accepted = 62.67%
Gen #58: temp = 0.002820, best score = 0.00293203, cur score = 0.00695621, worse

accepted = 67.23%
Gen #59: temp = 0.002791, best score = 0.00293203, cur score = 0.01279854, worse
accepted = 61.49%
Gen #60: temp = 0.002763, best score = 0.00293203, cur score = 0.00708839, worse
accepted = 65.24%
Gen #61: temp = 0.002736, best score = 0.00293203, cur score = 0.00762843, worse
accepted = 58.36%
Gen #62: temp = 0.002708, best score = 0.00293203, cur score = 0.01129812, worse
accepted = 45.01%
Gen #63: temp = 0.002681, best score = 0.00293203, cur score = 0.00780994, worse
accepted = 62.04%
Gen #64: temp = 0.002655, best score = 0.00293203, cur score = 0.00678911, worse
accepted = 66.48%
Gen #65: temp = 0.002628, best score = 0.00293203, cur score = 0.01281709, worse
accepted = 53.77%
Gen #66: temp = 0.002602, best score = 0.00293203, cur score = 0.00704642, worse
accepted = 53.84%
Gen #67: temp = 0.002576, best score = 0.00293203, cur score = 0.00654429, worse
accepted = 59.45%
Gen #68: temp = 0.002550, best score = 0.00293203, cur score = 0.00784596, worse
accepted = 67.50%
Gen #69: temp = 0.002524, best score = 0.00293203, cur score = 0.00530373, worse
accepted = 69.67%
Gen #70: temp = 0.002499, best score = 0.00293203, cur score = 0.00973508, worse
accepted = 69.43%
Gen #71: temp = 0.002474, best score = 0.00293203, cur score = 0.00984307, worse
accepted = 60.27%
Gen #72: temp = 0.002449, best score = 0.00293203, cur score = 0.01561599, worse
accepted = 49.19%
Gen #73: temp = 0.002425, best score = 0.00293203, cur score = 0.00857336, worse
accepted = 49.60%
Gen #74: temp = 0.002401, best score = 0.00293203, cur score = 0.00751592, worse
accepted = 58.24%
Gen #75: temp = 0.002377, best score = 0.00293203, cur score = 0.00700247, worse
accepted = 58.70%
Gen #76: temp = 0.002353, best score = 0.00293203, cur score = 0.00445953, worse
accepted = 60.14%
Gen #77: temp = 0.002329, best score = 0.00293203, cur score = 0.00759815, worse
accepted = 65.40%
Gen #78: temp = 0.002306, best score = 0.00293203, cur score = 0.00475026, worse
accepted = 60.87%
Gen #79: temp = 0.002283, best score = 0.00293203, cur score = 0.00439199, worse
accepted = 56.97%
Gen #80: temp = 0.002260, best score = 0.00293203, cur score = 0.01188215, worse
accepted = 59.99%
Gen #81: temp = 0.002238, best score = 0.00286244, cur score = 0.01014057, worse
accepted = 58.86%
Gen #82: temp = 0.002215, best score = 0.00286244, cur score = 0.00927597, worse

accepted = 65.82%
Gen #83: temp = 0.002193, best score = 0.00286244, cur score = 0.00447281, worse
accepted = 63.87%
Gen #84: temp = 0.002171, best score = 0.00286244, cur score = 0.00779317, worse
accepted = 64.26%
Gen #85: temp = 0.002149, best score = 0.00286244, cur score = 0.01340105, worse
accepted = 62.26%
Gen #86: temp = 0.002128, best score = 0.00286244, cur score = 0.00458453, worse
accepted = 57.72%
Gen #87: temp = 0.002107, best score = 0.00286244, cur score = 0.01071591, worse
accepted = 60.58%
Gen #88: temp = 0.002086, best score = 0.00286244, cur score = 0.00837627, worse
accepted = 56.85%
Gen #89: temp = 0.002065, best score = 0.00286244, cur score = 0.00383226, worse
accepted = 58.59%
Gen #90: temp = 0.002044, best score = 0.00286244, cur score = 0.00591641, worse
accepted = 59.46%
Gen #91: temp = 0.002024, best score = 0.00286244, cur score = 0.00550656, worse
accepted = 62.07%
Gen #92: temp = 0.002003, best score = 0.00286244, cur score = 0.01092759, worse
accepted = 56.47%
Gen #93: temp = 0.001983, best score = 0.00286244, cur score = 0.00459108, worse
accepted = 65.77%
Gen #94: temp = 0.001964, best score = 0.00286244, cur score = 0.01241568, worse
accepted = 61.86%
Gen #95: temp = 0.001944, best score = 0.00286244, cur score = 0.00697452, worse
accepted = 59.43%
Gen #96: temp = 0.001924, best score = 0.00286244, cur score = 0.00488232, worse
accepted = 60.42%
Gen #97: temp = 0.001905, best score = 0.00286244, cur score = 0.00442096, worse
accepted = 64.44%
Gen #98: temp = 0.001886, best score = 0.00286244, cur score = 0.00714926, worse
accepted = 62.08%
Gen #99: temp = 0.001867, best score = 0.00286244, cur score = 0.00691297, worse
accepted = 59.60%
Gen #100: temp = 0.001849, best score = 0.00286244, cur score = 0.00620254,
worse accepted = 57.04%
Gen #101: temp = 0.001830, best score = 0.00286244, cur score = 0.00788093,
worse accepted = 55.04%
Gen #102: temp = 0.001812, best score = 0.00286244, cur score = 0.00876455,
worse accepted = 56.18%
Gen #103: temp = 0.001794, best score = 0.00286244, cur score = 0.00541860,
worse accepted = 59.94%
Gen #104: temp = 0.001776, best score = 0.00286244, cur score = 0.00750747,
worse accepted = 59.90%
Gen #105: temp = 0.001758, best score = 0.00286244, cur score = 0.00438593,
worse accepted = 62.03%
Gen #106: temp = 0.001740, best score = 0.00286244, cur score = 0.00717833,

worse accepted = 63.78%
Gen #107: temp = 0.001723, best score = 0.00286244, cur score = 0.00528301,
worse accepted = 55.75%
Gen #108: temp = 0.001706, best score = 0.00286244, cur score = 0.00598406,
worse accepted = 60.55%
Gen #109: temp = 0.001689, best score = 0.00286244, cur score = 0.00595072,
worse accepted = 58.10%
Gen #110: temp = 0.001672, best score = 0.00286244, cur score = 0.00635325,
worse accepted = 58.06%
Gen #111: temp = 0.001655, best score = 0.00286244, cur score = 0.00549348,
worse accepted = 63.33%
Gen #112: temp = 0.001639, best score = 0.00286244, cur score = 0.00511859,
worse accepted = 50.19%
Gen #113: temp = 0.001622, best score = 0.00286244, cur score = 0.00470442,
worse accepted = 60.10%
Gen #114: temp = 0.001606, best score = 0.00286244, cur score = 0.00571387,
worse accepted = 57.43%
Gen #115: temp = 0.001590, best score = 0.00286244, cur score = 0.00476208,
worse accepted = 53.78%
Gen #116: temp = 0.001574, best score = 0.00286244, cur score = 0.00737953,
worse accepted = 58.89%
Gen #117: temp = 0.001558, best score = 0.00286244, cur score = 0.00508288,
worse accepted = 55.86%
Gen #118: temp = 0.001543, best score = 0.00286244, cur score = 0.00819129,
worse accepted = 56.42%
Gen #119: temp = 0.001527, best score = 0.00286244, cur score = 0.00445060,
worse accepted = 48.27%
Gen #120: temp = 0.001512, best score = 0.00286244, cur score = 0.00531498,
worse accepted = 58.12%
Gen #121: temp = 0.001497, best score = 0.00286244, cur score = 0.00723320,
worse accepted = 53.92%
Gen #122: temp = 0.001482, best score = 0.00286244, cur score = 0.00504295,
worse accepted = 56.48%
Gen #123: temp = 0.001467, best score = 0.00286244, cur score = 0.00442114,
worse accepted = 56.73%
Gen #124: temp = 0.001452, best score = 0.00286244, cur score = 0.00547533,
worse accepted = 51.61%
Gen #125: temp = 0.001438, best score = 0.00286244, cur score = 0.00413236,
worse accepted = 58.15%
Gen #126: temp = 0.001424, best score = 0.00286244, cur score = 0.00605493,
worse accepted = 53.30%
Gen #127: temp = 0.001409, best score = 0.00286244, cur score = 0.01122288,
worse accepted = 55.24%
Gen #128: temp = 0.001395, best score = 0.00286244, cur score = 0.00460471,
worse accepted = 55.80%
Gen #129: temp = 0.001381, best score = 0.00286244, cur score = 0.00436133,
worse accepted = 48.00%
Gen #130: temp = 0.001367, best score = 0.00286244, cur score = 0.00795569,

worse accepted = 50.90%
Gen #131: temp = 0.001354, best score = 0.00286244, cur score = 0.00715992,
worse accepted = 55.16%
Gen #132: temp = 0.001340, best score = 0.00286244, cur score = 0.00593587,
worse accepted = 55.00%
Gen #133: temp = 0.001327, best score = 0.00286244, cur score = 0.00890895,
worse accepted = 50.58%
Gen #134: temp = 0.001314, best score = 0.00286244, cur score = 0.00452008,
worse accepted = 54.29%
Gen #135: temp = 0.001300, best score = 0.00286244, cur score = 0.00459034,
worse accepted = 49.11%
Gen #136: temp = 0.001287, best score = 0.00286244, cur score = 0.00540410,
worse accepted = 49.41%
Gen #137: temp = 0.001275, best score = 0.00286244, cur score = 0.00419526,
worse accepted = 43.70%
Gen #138: temp = 0.001262, best score = 0.00286244, cur score = 0.00675014,
worse accepted = 55.95%
Gen #139: temp = 0.001249, best score = 0.00286244, cur score = 0.00804207,
worse accepted = 46.63%
Gen #140: temp = 0.001237, best score = 0.00286244, cur score = 0.00442074,
worse accepted = 49.27%
Gen #141: temp = 0.001224, best score = 0.00286244, cur score = 0.00424611,
worse accepted = 58.32%
Gen #142: temp = 0.001212, best score = 0.00286244, cur score = 0.00489921,
worse accepted = 55.61%
Gen #143: temp = 0.001200, best score = 0.00286244, cur score = 0.00456284,
worse accepted = 49.32%
Gen #144: temp = 0.001188, best score = 0.00286244, cur score = 0.00602770,
worse accepted = 52.95%
Gen #145: temp = 0.001176, best score = 0.00286244, cur score = 0.00575182,
worse accepted = 49.07%
Gen #146: temp = 0.001164, best score = 0.00286244, cur score = 0.01095267,
worse accepted = 44.51%
Gen #147: temp = 0.001153, best score = 0.00286244, cur score = 0.00554985,
worse accepted = 40.82%
Gen #148: temp = 0.001141, best score = 0.00286244, cur score = 0.00878163,
worse accepted = 51.07%
Gen #149: temp = 0.001130, best score = 0.00286244, cur score = 0.00758774,
worse accepted = 45.13%
Gen #150: temp = 0.001118, best score = 0.00285976, cur score = 0.00408881,
worse accepted = 50.39%
Gen #151: temp = 0.001107, best score = 0.00285976, cur score = 0.00569293,
worse accepted = 52.96%
Gen #152: temp = 0.001096, best score = 0.00285976, cur score = 0.00503279,
worse accepted = 46.19%
Gen #153: temp = 0.001085, best score = 0.00285976, cur score = 0.00360263,
worse accepted = 49.59%
Gen #154: temp = 0.001074, best score = 0.00285976, cur score = 0.00573519,

worse accepted = 50.67%
Gen #155: temp = 0.001064, best score = 0.00285976, cur score = 0.00440118,
worse accepted = 48.04%
Gen #156: temp = 0.001053, best score = 0.00285976, cur score = 0.00542242,
worse accepted = 53.09%
Gen #157: temp = 0.001042, best score = 0.00285976, cur score = 0.00607188,
worse accepted = 48.76%
Gen #158: temp = 0.001032, best score = 0.00285976, cur score = 0.00619288,
worse accepted = 51.23%
Gen #159: temp = 0.001022, best score = 0.00284336, cur score = 0.00571461,
worse accepted = 51.12%
Gen #160: temp = 0.001012, best score = 0.00284336, cur score = 0.00446127,
worse accepted = 50.94%
Gen #161: temp = 0.001001, best score = 0.00284336, cur score = 0.00452236,
worse accepted = 50.25%
Gen #162: temp = 0.000991, best score = 0.00284336, cur score = 0.00512458,
worse accepted = 53.10%
Gen #163: temp = 0.000981, best score = 0.00284336, cur score = 0.00320905,
worse accepted = 45.54%
Gen #164: temp = 0.000972, best score = 0.00284336, cur score = 0.00665193,
worse accepted = 41.46%
Gen #165: temp = 0.000962, best score = 0.00284336, cur score = 0.00637187,
worse accepted = 38.77%
Gen #166: temp = 0.000952, best score = 0.00284336, cur score = 0.00493374,
worse accepted = 41.07%
Gen #167: temp = 0.000943, best score = 0.00284336, cur score = 0.00533690,
worse accepted = 47.02%
Gen #168: temp = 0.000933, best score = 0.00284336, cur score = 0.00484067,
worse accepted = 49.33%
Gen #169: temp = 0.000924, best score = 0.00284336, cur score = 0.00847979,
worse accepted = 43.34%
Gen #170: temp = 0.000915, best score = 0.00284336, cur score = 0.00369544,
worse accepted = 45.83%
Gen #171: temp = 0.000906, best score = 0.00284336, cur score = 0.00347994,
worse accepted = 45.04%
Gen #172: temp = 0.000897, best score = 0.00284336, cur score = 0.00543003,
worse accepted = 50.75%
Gen #173: temp = 0.000888, best score = 0.00284336, cur score = 0.00446744,
worse accepted = 35.91%
Gen #174: temp = 0.000879, best score = 0.00284336, cur score = 0.00471114,
worse accepted = 48.79%
Gen #175: temp = 0.000870, best score = 0.00284336, cur score = 0.00402966,
worse accepted = 44.73%
Gen #176: temp = 0.000861, best score = 0.00284336, cur score = 0.00654449,
worse accepted = 44.69%
Gen #177: temp = 0.000853, best score = 0.00284336, cur score = 0.00662838,
worse accepted = 41.94%
Gen #178: temp = 0.000844, best score = 0.00284336, cur score = 0.00572994,

worse accepted = 46.08%
Gen #179: temp = 0.000836, best score = 0.00284336, cur score = 0.00454698,
worse accepted = 45.88%
Gen #180: temp = 0.000827, best score = 0.00284336, cur score = 0.00500620,
worse accepted = 42.90%
Gen #181: temp = 0.000819, best score = 0.00284336, cur score = 0.00436832,
worse accepted = 49.96%
Gen #182: temp = 0.000811, best score = 0.00284336, cur score = 0.00683728,
worse accepted = 43.58%
Gen #183: temp = 0.000803, best score = 0.00284336, cur score = 0.00533313,
worse accepted = 47.83%
Gen #184: temp = 0.000795, best score = 0.00284336, cur score = 0.00488876,
worse accepted = 49.16%
Gen #185: temp = 0.000787, best score = 0.00284336, cur score = 0.00482989,
worse accepted = 47.05%
Gen #186: temp = 0.000779, best score = 0.00284336, cur score = 0.00355180,
worse accepted = 41.61%
Gen #187: temp = 0.000771, best score = 0.00284336, cur score = 0.00696154,
worse accepted = 43.15%
Gen #188: temp = 0.000763, best score = 0.00284336, cur score = 0.00697091,
worse accepted = 38.72%
Gen #189: temp = 0.000756, best score = 0.00284336, cur score = 0.00558097,
worse accepted = 39.00%
Gen #190: temp = 0.000748, best score = 0.00284336, cur score = 0.00602191,
worse accepted = 46.77%
Gen #191: temp = 0.000741, best score = 0.00284336, cur score = 0.00618746,
worse accepted = 43.93%
Gen #192: temp = 0.000733, best score = 0.00284336, cur score = 0.00513589,
worse accepted = 44.11%
Gen #193: temp = 0.000726, best score = 0.00284336, cur score = 0.00374297,
worse accepted = 45.40%
Gen #194: temp = 0.000719, best score = 0.00284336, cur score = 0.00799410,
worse accepted = 38.11%
Gen #195: temp = 0.000712, best score = 0.00284336, cur score = 0.00403983,
worse accepted = 40.76%
Gen #196: temp = 0.000704, best score = 0.00284336, cur score = 0.00484479,
worse accepted = 43.36%
Gen #197: temp = 0.000697, best score = 0.00284336, cur score = 0.00344871,
worse accepted = 39.34%
Gen #198: temp = 0.000690, best score = 0.00284336, cur score = 0.00383224,
worse accepted = 44.93%
Gen #199: temp = 0.000684, best score = 0.00284336, cur score = 0.00385427,
worse accepted = 46.75%
Gen #200: temp = 0.000677, best score = 0.00284336, cur score = 0.00614412,
worse accepted = 36.61%
Gen #201: temp = 0.000670, best score = 0.00284336, cur score = 0.00563171,
worse accepted = 37.88%
Gen #202: temp = 0.000663, best score = 0.00284336, cur score = 0.00538174,

worse accepted = 42.20%
Gen #203: temp = 0.000657, best score = 0.00284336, cur score = 0.00646463,
worse accepted = 41.29%
Gen #204: temp = 0.000650, best score = 0.00284336, cur score = 0.00426718,
worse accepted = 39.20%
Gen #205: temp = 0.000644, best score = 0.00284336, cur score = 0.00374336,
worse accepted = 39.89%
Gen #206: temp = 0.000637, best score = 0.00284336, cur score = 0.00440566,
worse accepted = 43.47%
Gen #207: temp = 0.000631, best score = 0.00284336, cur score = 0.00570694,
worse accepted = 44.02%
Gen #208: temp = 0.000624, best score = 0.00284336, cur score = 0.00457201,
worse accepted = 45.84%
Gen #209: temp = 0.000618, best score = 0.00284336, cur score = 0.00493407,
worse accepted = 45.34%
Gen #210: temp = 0.000612, best score = 0.00284336, cur score = 0.00453805,
worse accepted = 35.26%
Gen #211: temp = 0.000606, best score = 0.00284336, cur score = 0.00530829,
worse accepted = 42.80%
Gen #212: temp = 0.000600, best score = 0.00284336, cur score = 0.00586076,
worse accepted = 40.22%
Gen #213: temp = 0.000594, best score = 0.00284336, cur score = 0.00497453,
worse accepted = 41.72%
Gen #214: temp = 0.000588, best score = 0.00284336, cur score = 0.00426312,
worse accepted = 39.92%
Gen #215: temp = 0.000582, best score = 0.00284336, cur score = 0.00340260,
worse accepted = 43.17%
Gen #216: temp = 0.000576, best score = 0.00284336, cur score = 0.00488449,
worse accepted = 45.26%
Gen #217: temp = 0.000570, best score = 0.00284336, cur score = 0.00500628,
worse accepted = 41.62%
Gen #218: temp = 0.000565, best score = 0.00284336, cur score = 0.00419873,
worse accepted = 41.42%
Gen #219: temp = 0.000559, best score = 0.00284336, cur score = 0.00337211,
worse accepted = 38.48%
Gen #220: temp = 0.000553, best score = 0.00284336, cur score = 0.00364464,
worse accepted = 45.98%
Gen #221: temp = 0.000548, best score = 0.00284336, cur score = 0.00409181,
worse accepted = 41.89%
Gen #222: temp = 0.000542, best score = 0.00284336, cur score = 0.00416678,
worse accepted = 43.08%
Gen #223: temp = 0.000537, best score = 0.00284336, cur score = 0.00558181,
worse accepted = 41.58%
Gen #224: temp = 0.000532, best score = 0.00284336, cur score = 0.00353793,
worse accepted = 42.46%
Gen #225: temp = 0.000526, best score = 0.00284336, cur score = 0.00682398,
worse accepted = 37.34%
Gen #226: temp = 0.000521, best score = 0.00284336, cur score = 0.00400890,

worse accepted = 34.93%
Gen #227: temp = 0.000516, best score = 0.00284336, cur score = 0.00352805,
worse accepted = 40.86%
Gen #228: temp = 0.000511, best score = 0.00284336, cur score = 0.00457441,
worse accepted = 43.44%
Gen #229: temp = 0.000506, best score = 0.00284336, cur score = 0.00471840,
worse accepted = 39.09%
Gen #230: temp = 0.000501, best score = 0.00284336, cur score = 0.00713304,
worse accepted = 38.37%
Gen #231: temp = 0.000496, best score = 0.00284336, cur score = 0.00423463,
worse accepted = 29.15%
Gen #232: temp = 0.000491, best score = 0.00284336, cur score = 0.00428653,
worse accepted = 38.20%
Gen #233: temp = 0.000486, best score = 0.00284336, cur score = 0.00429806,
worse accepted = 42.72%
Gen #234: temp = 0.000481, best score = 0.00284336, cur score = 0.00454567,
worse accepted = 41.63%
Gen #235: temp = 0.000476, best score = 0.00284336, cur score = 0.00459545,
worse accepted = 39.41%
Gen #236: temp = 0.000471, best score = 0.00284336, cur score = 0.00376241,
worse accepted = 37.42%
Gen #237: temp = 0.000467, best score = 0.00284336, cur score = 0.00400815,
worse accepted = 45.24%
Gen #238: temp = 0.000462, best score = 0.00284336, cur score = 0.00476902,
worse accepted = 37.33%
Gen #239: temp = 0.000457, best score = 0.00284336, cur score = 0.00344155,
worse accepted = 37.88%
Gen #240: temp = 0.000453, best score = 0.00284336, cur score = 0.00442706,
worse accepted = 40.32%
Gen #241: temp = 0.000448, best score = 0.00284336, cur score = 0.00450558,
worse accepted = 37.73%
Gen #242: temp = 0.000444, best score = 0.00284336, cur score = 0.00325940,
worse accepted = 36.51%
Gen #243: temp = 0.000439, best score = 0.00284336, cur score = 0.00352212,
worse accepted = 37.88%
Gen #244: temp = 0.000435, best score = 0.00284336, cur score = 0.00329390,
worse accepted = 38.94%
Gen #245: temp = 0.000430, best score = 0.00284336, cur score = 0.00304446,
worse accepted = 41.39%
Gen #246: temp = 0.000426, best score = 0.00284336, cur score = 0.00349968,
worse accepted = 37.42%
Gen #247: temp = 0.000422, best score = 0.00284336, cur score = 0.00366424,
worse accepted = 34.56%
Gen #248: temp = 0.000418, best score = 0.00284336, cur score = 0.00383578,
worse accepted = 37.74%
Gen #249: temp = 0.000414, best score = 0.00284336, cur score = 0.00396631,
worse accepted = 38.00%
Gen #250: temp = 0.000409, best score = 0.00284336, cur score = 0.00441764,

worse accepted = 39.24%
Gen #251: temp = 0.000405, best score = 0.00284336, cur score = 0.00377662,
worse accepted = 39.58%
Gen #252: temp = 0.000401, best score = 0.00284336, cur score = 0.00487552,
worse accepted = 36.17%
Gen #253: temp = 0.000397, best score = 0.00284336, cur score = 0.00474773,
worse accepted = 37.66%
Gen #254: temp = 0.000393, best score = 0.00284336, cur score = 0.00430620,
worse accepted = 37.17%
Gen #255: temp = 0.000389, best score = 0.00284336, cur score = 0.00407969,
worse accepted = 36.06%
Gen #256: temp = 0.000385, best score = 0.00284336, cur score = 0.00360229,
worse accepted = 41.26%
Gen #257: temp = 0.000382, best score = 0.00284336, cur score = 0.00435451,
worse accepted = 38.26%
Gen #258: temp = 0.000378, best score = 0.00284336, cur score = 0.00410461,
worse accepted = 36.95%
Gen #259: temp = 0.000374, best score = 0.00284336, cur score = 0.00412545,
worse accepted = 39.39%
Gen #260: temp = 0.000370, best score = 0.00284336, cur score = 0.00375313,
worse accepted = 38.83%
Gen #261: temp = 0.000367, best score = 0.00284336, cur score = 0.00396869,
worse accepted = 37.28%
Gen #262: temp = 0.000363, best score = 0.00284336, cur score = 0.00324202,
worse accepted = 39.43%
Gen #263: temp = 0.000359, best score = 0.00284336, cur score = 0.00376157,
worse accepted = 35.57%
Gen #264: temp = 0.000356, best score = 0.00284336, cur score = 0.00389809,
worse accepted = 37.90%
Gen #265: temp = 0.000352, best score = 0.00284336, cur score = 0.00473576,
worse accepted = 38.67%
Gen #266: temp = 0.000349, best score = 0.00284336, cur score = 0.00376682,
worse accepted = 39.30%
Gen #267: temp = 0.000345, best score = 0.00284336, cur score = 0.00305739,
worse accepted = 37.52%
Gen #268: temp = 0.000342, best score = 0.00284336, cur score = 0.00351612,
worse accepted = 36.95%
Gen #269: temp = 0.000338, best score = 0.00284336, cur score = 0.00311130,
worse accepted = 38.31%
Gen #270: temp = 0.000335, best score = 0.00284336, cur score = 0.00417529,
worse accepted = 37.45%
Gen #271: temp = 0.000331, best score = 0.00284336, cur score = 0.00412327,
worse accepted = 36.49%
Gen #272: temp = 0.000328, best score = 0.00284336, cur score = 0.00330649,
worse accepted = 39.43%
Gen #273: temp = 0.000325, best score = 0.00284336, cur score = 0.00368316,
worse accepted = 35.38%
Gen #274: temp = 0.000322, best score = 0.00284336, cur score = 0.00449570,

worse accepted = 35.10%
Gen #275: temp = 0.000318, best score = 0.00284336, cur score = 0.00439478,
worse accepted = 35.77%
Gen #276: temp = 0.000315, best score = 0.00284336, cur score = 0.00435608,
worse accepted = 33.22%
Gen #277: temp = 0.000312, best score = 0.00284336, cur score = 0.00327339,
worse accepted = 32.55%
Gen #278: temp = 0.000309, best score = 0.00284336, cur score = 0.00376954,
worse accepted = 35.41%
Gen #279: temp = 0.000306, best score = 0.00284336, cur score = 0.00364111,
worse accepted = 35.84%
Gen #280: temp = 0.000303, best score = 0.00284336, cur score = 0.00378648,
worse accepted = 28.02%
Gen #281: temp = 0.000300, best score = 0.00283876, cur score = 0.00370037,
worse accepted = 35.94%
Gen #282: temp = 0.000297, best score = 0.00283876, cur score = 0.00303233,
worse accepted = 38.11%
Gen #283: temp = 0.000294, best score = 0.00283876, cur score = 0.00329048,
worse accepted = 36.43%
Gen #284: temp = 0.000291, best score = 0.00283876, cur score = 0.00374162,
worse accepted = 35.43%
Gen #285: temp = 0.000288, best score = 0.00283876, cur score = 0.00334678,
worse accepted = 36.25%
Gen #286: temp = 0.000285, best score = 0.00283876, cur score = 0.00453226,
worse accepted = 33.64%
Gen #287: temp = 0.000282, best score = 0.00283876, cur score = 0.00323053,
worse accepted = 32.25%
Gen #288: temp = 0.000279, best score = 0.00283876, cur score = 0.00349216,
worse accepted = 36.41%
Gen #289: temp = 0.000277, best score = 0.00283330, cur score = 0.00347813,
worse accepted = 37.42%
Gen #290: temp = 0.000274, best score = 0.00283330, cur score = 0.00370587,
worse accepted = 35.73%
Gen #291: temp = 0.000271, best score = 0.00283330, cur score = 0.00416607,
worse accepted = 35.37%
Gen #292: temp = 0.000268, best score = 0.00283330, cur score = 0.00430077,
worse accepted = 34.11%
Gen #293: temp = 0.000266, best score = 0.00283330, cur score = 0.00332227,
worse accepted = 34.41%
Gen #294: temp = 0.000263, best score = 0.00283330, cur score = 0.00352599,
worse accepted = 36.46%
Gen #295: temp = 0.000260, best score = 0.00283330, cur score = 0.00431727,
worse accepted = 36.79%
Gen #296: temp = 0.000258, best score = 0.00283330, cur score = 0.00318675,
worse accepted = 36.00%
Gen #297: temp = 0.000255, best score = 0.00283330, cur score = 0.00511563,
worse accepted = 36.30%
Gen #298: temp = 0.000253, best score = 0.00283330, cur score = 0.00328234,

worse accepted = 32.39%
Gen #299: temp = 0.000250, best score = 0.00283330, cur score = 0.00347037,
worse accepted = 33.93%
Gen #300: temp = 0.000248, best score = 0.00283330, cur score = 0.00342076,
worse accepted = 32.26%
Gen #301: temp = 0.000245, best score = 0.00283330, cur score = 0.00381809,
worse accepted = 33.49%
Gen #302: temp = 0.000243, best score = 0.00283330, cur score = 0.00343643,
worse accepted = 33.77%
Gen #303: temp = 0.000240, best score = 0.00283330, cur score = 0.00421026,
worse accepted = 35.20%
Gen #304: temp = 0.000238, best score = 0.00283330, cur score = 0.00396114,
worse accepted = 32.18%
Gen #305: temp = 0.000236, best score = 0.00283330, cur score = 0.00347875,
worse accepted = 30.63%
Gen #306: temp = 0.000233, best score = 0.00283330, cur score = 0.00320363,
worse accepted = 31.86%
Gen #307: temp = 0.000231, best score = 0.00283330, cur score = 0.00313100,
worse accepted = 36.78%
Gen #308: temp = 0.000229, best score = 0.00283330, cur score = 0.00361878,
worse accepted = 35.17%
Gen #309: temp = 0.000226, best score = 0.00283330, cur score = 0.00364755,
worse accepted = 31.97%
Gen #310: temp = 0.000224, best score = 0.00283330, cur score = 0.00299644,
worse accepted = 30.20%
Gen #311: temp = 0.000222, best score = 0.00283330, cur score = 0.00354459,
worse accepted = 32.73%
Gen #312: temp = 0.000220, best score = 0.00283330, cur score = 0.00358950,
worse accepted = 33.34%
Gen #313: temp = 0.000217, best score = 0.00283330, cur score = 0.00333428,
worse accepted = 32.92%
Gen #314: temp = 0.000215, best score = 0.00283330, cur score = 0.00360289,
worse accepted = 29.49%
Gen #315: temp = 0.000213, best score = 0.00283330, cur score = 0.00335300,
worse accepted = 33.96%
Gen #316: temp = 0.000211, best score = 0.00283330, cur score = 0.00418012,
worse accepted = 34.72%
Gen #317: temp = 0.000209, best score = 0.00283330, cur score = 0.00337884,
worse accepted = 32.09%
Gen #318: temp = 0.000207, best score = 0.00283330, cur score = 0.00323722,
worse accepted = 34.64%
Gen #319: temp = 0.000205, best score = 0.00283330, cur score = 0.00343946,
worse accepted = 34.55%
Gen #320: temp = 0.000203, best score = 0.00283330, cur score = 0.00307233,
worse accepted = 33.48%
Gen #321: temp = 0.000201, best score = 0.00283330, cur score = 0.00317575,
worse accepted = 35.59%
Gen #322: temp = 0.000199, best score = 0.00283330, cur score = 0.00394078,

worse accepted = 33.11%
Gen #323: temp = 0.000197, best score = 0.00283330, cur score = 0.00361168,
worse accepted = 32.03%
Gen #324: temp = 0.000195, best score = 0.00283330, cur score = 0.00323314,
worse accepted = 32.59%
Gen #325: temp = 0.000193, best score = 0.00283330, cur score = 0.00317689,
worse accepted = 32.83%
Gen #326: temp = 0.000191, best score = 0.00283330, cur score = 0.00373181,
worse accepted = 29.68%
Gen #327: temp = 0.000189, best score = 0.00283330, cur score = 0.00354592,
worse accepted = 33.75%
Gen #328: temp = 0.000187, best score = 0.00283330, cur score = 0.00303892,
worse accepted = 31.82%
Gen #329: temp = 0.000185, best score = 0.00283330, cur score = 0.00324592,
worse accepted = 30.55%
Gen #330: temp = 0.000183, best score = 0.00283330, cur score = 0.00433685,
worse accepted = 31.55%
Gen #331: temp = 0.000181, best score = 0.00283330, cur score = 0.00307591,
worse accepted = 30.51%
Gen #332: temp = 0.000180, best score = 0.00283330, cur score = 0.00344422,
worse accepted = 34.62%
Gen #333: temp = 0.000178, best score = 0.00283330, cur score = 0.00327757,
worse accepted = 33.06%
Gen #334: temp = 0.000176, best score = 0.00283253, cur score = 0.00320344,
worse accepted = 31.88%
Gen #335: temp = 0.000174, best score = 0.00283253, cur score = 0.00374695,
worse accepted = 33.39%
Gen #336: temp = 0.000172, best score = 0.00283253, cur score = 0.00372292,
worse accepted = 32.34%
Gen #337: temp = 0.000171, best score = 0.00283253, cur score = 0.00319755,
worse accepted = 26.64%
Gen #338: temp = 0.000169, best score = 0.00283253, cur score = 0.00422099,
worse accepted = 28.55%
Gen #339: temp = 0.000167, best score = 0.00283253, cur score = 0.00311605,
worse accepted = 31.51%
Gen #340: temp = 0.000166, best score = 0.00283253, cur score = 0.00299930,
worse accepted = 28.14%
Gen #341: temp = 0.000164, best score = 0.00283253, cur score = 0.00302904,
worse accepted = 30.01%
Gen #342: temp = 0.000162, best score = 0.00283253, cur score = 0.00326191,
worse accepted = 29.88%
Gen #343: temp = 0.000161, best score = 0.00283253, cur score = 0.00324620,
worse accepted = 33.19%
Gen #344: temp = 0.000159, best score = 0.00283253, cur score = 0.00338998,
worse accepted = 32.10%
Gen #345: temp = 0.000158, best score = 0.00283253, cur score = 0.00317290,
worse accepted = 31.64%
Gen #346: temp = 0.000156, best score = 0.00283253, cur score = 0.00331544,

worse accepted = 30.49%
Gen #347: temp = 0.000154, best score = 0.00283253, cur score = 0.00341704,
worse accepted = 30.85%
Gen #348: temp = 0.000153, best score = 0.00283253, cur score = 0.00427076,
worse accepted = 29.17%
Gen #349: temp = 0.000151, best score = 0.00283253, cur score = 0.00353893,
worse accepted = 27.98%
Gen #350: temp = 0.000150, best score = 0.00283253, cur score = 0.00307529,
worse accepted = 30.64%
Gen #351: temp = 0.000148, best score = 0.00283253, cur score = 0.00336029,
worse accepted = 29.70%
Gen #352: temp = 0.000147, best score = 0.00283253, cur score = 0.00329355,
worse accepted = 30.75%
Gen #353: temp = 0.000145, best score = 0.00283253, cur score = 0.00348906,
worse accepted = 29.57%
Gen #354: temp = 0.000144, best score = 0.00283253, cur score = 0.00309888,
worse accepted = 29.49%
Gen #355: temp = 0.000143, best score = 0.00283253, cur score = 0.00322507,
worse accepted = 30.74%
Gen #356: temp = 0.000141, best score = 0.00283253, cur score = 0.00420808,
worse accepted = 26.21%
Gen #357: temp = 0.000140, best score = 0.00283253, cur score = 0.00328618,
worse accepted = 26.92%
Gen #358: temp = 0.000138, best score = 0.00283253, cur score = 0.00333714,
worse accepted = 30.80%
Gen #359: temp = 0.000137, best score = 0.00283253, cur score = 0.00326856,
worse accepted = 28.81%
Gen #360: temp = 0.000136, best score = 0.00283253, cur score = 0.00310313,
worse accepted = 29.00%
Gen #361: temp = 0.000134, best score = 0.00283253, cur score = 0.00358588,
worse accepted = 29.73%
Gen #362: temp = 0.000133, best score = 0.00283253, cur score = 0.00293275,
worse accepted = 31.57%
Gen #363: temp = 0.000131, best score = 0.00283253, cur score = 0.00331316,
worse accepted = 30.32%
Gen #364: temp = 0.000130, best score = 0.00283253, cur score = 0.00344920,
worse accepted = 29.72%
Gen #365: temp = 0.000129, best score = 0.00283253, cur score = 0.00341464,
worse accepted = 30.00%
Gen #366: temp = 0.000128, best score = 0.00283253, cur score = 0.00307431,
worse accepted = 28.67%
Gen #367: temp = 0.000126, best score = 0.00283253, cur score = 0.00356755,
worse accepted = 30.88%
Gen #368: temp = 0.000125, best score = 0.00283253, cur score = 0.00324674,
worse accepted = 30.37%
Gen #369: temp = 0.000124, best score = 0.00283253, cur score = 0.00347658,
worse accepted = 26.96%
Gen #370: temp = 0.000123, best score = 0.00283253, cur score = 0.00323830,

worse accepted = 30.17%
Gen #371: temp = 0.000121, best score = 0.00283253, cur score = 0.00325871,
worse accepted = 29.12%
Gen #372: temp = 0.000120, best score = 0.00283253, cur score = 0.00332629,
worse accepted = 27.88%
Gen #373: temp = 0.000119, best score = 0.00283253, cur score = 0.00292739,
worse accepted = 27.64%
Gen #374: temp = 0.000118, best score = 0.00283253, cur score = 0.00333471,
worse accepted = 27.86%
Gen #375: temp = 0.000117, best score = 0.00283253, cur score = 0.00319344,
worse accepted = 27.08%
Gen #376: temp = 0.000115, best score = 0.00283253, cur score = 0.00314224,
worse accepted = 26.20%
Gen #377: temp = 0.000114, best score = 0.00283253, cur score = 0.00321129,
worse accepted = 28.61%
Gen #378: temp = 0.000113, best score = 0.00283253, cur score = 0.00298650,
worse accepted = 28.07%
Gen #379: temp = 0.000112, best score = 0.00283253, cur score = 0.00307881,
worse accepted = 28.50%
Gen #380: temp = 0.000111, best score = 0.00283253, cur score = 0.00331409,
worse accepted = 27.21%
Gen #381: temp = 0.000110, best score = 0.00282556, cur score = 0.00310545,
worse accepted = 27.28%
Gen #382: temp = 0.000109, best score = 0.00282556, cur score = 0.00312543,
worse accepted = 26.80%
Gen #383: temp = 0.000108, best score = 0.00282556, cur score = 0.00298101,
worse accepted = 27.63%
Gen #384: temp = 0.000106, best score = 0.00282556, cur score = 0.00333094,
worse accepted = 26.61%
Gen #385: temp = 0.000105, best score = 0.00282556, cur score = 0.00351259,
worse accepted = 26.25%
Gen #386: temp = 0.000104, best score = 0.00282556, cur score = 0.00293897,
worse accepted = 25.19%
Gen #387: temp = 0.000103, best score = 0.00282556, cur score = 0.00302238,
worse accepted = 26.90%
Gen #388: temp = 0.000102, best score = 0.00282556, cur score = 0.00344385,
worse accepted = 26.56%
Gen #389: temp = 0.000101, best score = 0.00282556, cur score = 0.00300030,
worse accepted = 27.34%
Gen #390: temp = 0.000100, best score = 0.00282556, cur score = 0.00337378,
worse accepted = 26.08%
Gen #391: temp = 0.000099, best score = 0.00282556, cur score = 0.00319415,
worse accepted = 26.50%
Gen #392: temp = 0.000098, best score = 0.00282556, cur score = 0.00307823,
worse accepted = 26.55%
Gen #393: temp = 0.000097, best score = 0.00282556, cur score = 0.00317602,
worse accepted = 27.19%
Gen #394: temp = 0.000096, best score = 0.00282556, cur score = 0.00304252,

worse accepted = 26.94%
Gen #395: temp = 0.000095, best score = 0.00282556, cur score = 0.00314597,
worse accepted = 25.91%
Gen #396: temp = 0.000094, best score = 0.00282556, cur score = 0.00294149,
worse accepted = 25.34%
Gen #397: temp = 0.000093, best score = 0.00282556, cur score = 0.00353350,
worse accepted = 24.94%
Gen #398: temp = 0.000093, best score = 0.00282556, cur score = 0.00311040,
worse accepted = 24.81%
Gen #399: temp = 0.000092, best score = 0.00282556, cur score = 0.00321009,
worse accepted = 25.65%
Gen #400: temp = 0.000091, best score = 0.00282556, cur score = 0.00294670,
worse accepted = 22.91%
Gen #401: temp = 0.000090, best score = 0.00282556, cur score = 0.00300230,
worse accepted = 25.00%
Gen #402: temp = 0.000089, best score = 0.00282556, cur score = 0.00351645,
worse accepted = 25.12%
Gen #403: temp = 0.000088, best score = 0.00282556, cur score = 0.00310500,
worse accepted = 25.20%
Gen #404: temp = 0.000087, best score = 0.00282556, cur score = 0.00305129,
worse accepted = 21.74%
Gen #405: temp = 0.000086, best score = 0.00282556, cur score = 0.00321425,
worse accepted = 25.54%
Gen #406: temp = 0.000085, best score = 0.00282556, cur score = 0.00332868,
worse accepted = 24.97%
Gen #407: temp = 0.000085, best score = 0.00282556, cur score = 0.00301379,
worse accepted = 23.86%
Gen #408: temp = 0.000084, best score = 0.00282556, cur score = 0.00331425,
worse accepted = 24.09%
Gen #409: temp = 0.000083, best score = 0.00282556, cur score = 0.00291097,
worse accepted = 23.13%
Gen #410: temp = 0.000082, best score = 0.00282556, cur score = 0.00322988,
worse accepted = 23.71%
Gen #411: temp = 0.000081, best score = 0.00282556, cur score = 0.00310383,
worse accepted = 22.59%
Gen #412: temp = 0.000080, best score = 0.00282556, cur score = 0.00300067,
worse accepted = 24.66%
Gen #413: temp = 0.000080, best score = 0.00282556, cur score = 0.00312452,
worse accepted = 22.84%
Gen #414: temp = 0.000079, best score = 0.00282556, cur score = 0.00340403,
worse accepted = 21.86%
Gen #415: temp = 0.000078, best score = 0.00282556, cur score = 0.00303342,
worse accepted = 23.58%
Gen #416: temp = 0.000077, best score = 0.00282556, cur score = 0.00352010,
worse accepted = 22.96%
Gen #417: temp = 0.000076, best score = 0.00282556, cur score = 0.00329390,
worse accepted = 23.00%
Gen #418: temp = 0.000076, best score = 0.00282556, cur score = 0.00315098,

worse accepted = 22.18%
Gen #419: temp = 0.000075, best score = 0.00282556, cur score = 0.00306085,
worse accepted = 21.23%
Gen #420: temp = 0.000074, best score = 0.00282556, cur score = 0.00319740,
worse accepted = 22.99%
Gen #421: temp = 0.000073, best score = 0.00282556, cur score = 0.00347827,
worse accepted = 21.68%
Gen #422: temp = 0.000073, best score = 0.00282556, cur score = 0.00299564,
worse accepted = 21.15%
Gen #423: temp = 0.000072, best score = 0.00282556, cur score = 0.00325344,
worse accepted = 21.66%
Gen #424: temp = 0.000071, best score = 0.00282556, cur score = 0.00318087,
worse accepted = 21.65%
Gen #425: temp = 0.000071, best score = 0.00282556, cur score = 0.00319654,
worse accepted = 21.41%
Gen #426: temp = 0.000070, best score = 0.00282556, cur score = 0.00312421,
worse accepted = 21.44%
Gen #427: temp = 0.000069, best score = 0.00282556, cur score = 0.00301009,
worse accepted = 18.99%
Gen #428: temp = 0.000068, best score = 0.00282556, cur score = 0.00336917,
worse accepted = 20.91%
Gen #429: temp = 0.000068, best score = 0.00282556, cur score = 0.00294744,
worse accepted = 20.83%
Gen #430: temp = 0.000067, best score = 0.00282556, cur score = 0.00298139,
worse accepted = 19.76%
Gen #431: temp = 0.000066, best score = 0.00282556, cur score = 0.00306133,
worse accepted = 21.49%
Gen #432: temp = 0.000066, best score = 0.00282556, cur score = 0.00289628,
worse accepted = 20.11%
Gen #433: temp = 0.000065, best score = 0.00282556, cur score = 0.00320098,
worse accepted = 20.54%
Gen #434: temp = 0.000064, best score = 0.00282556, cur score = 0.00321981,
worse accepted = 20.69%
Gen #435: temp = 0.000064, best score = 0.00282556, cur score = 0.00294945,
worse accepted = 19.78%
Gen #436: temp = 0.000063, best score = 0.00282556, cur score = 0.00297072,
worse accepted = 19.60%
Gen #437: temp = 0.000063, best score = 0.00282556, cur score = 0.00320904,
worse accepted = 19.24%
Gen #438: temp = 0.000062, best score = 0.00282556, cur score = 0.00316073,
worse accepted = 18.71%
Gen #439: temp = 0.000061, best score = 0.00282556, cur score = 0.00306834,
worse accepted = 18.47%
Gen #440: temp = 0.000061, best score = 0.00282556, cur score = 0.00319919,
worse accepted = 19.40%
Gen #441: temp = 0.000060, best score = 0.00282556, cur score = 0.00327091,
worse accepted = 18.94%
Gen #442: temp = 0.000059, best score = 0.00282556, cur score = 0.00340848,

worse accepted = 18.91%
Gen #443: temp = 0.000059, best score = 0.00282556, cur score = 0.00297301,
worse accepted = 19.12%
Gen #444: temp = 0.000058, best score = 0.00282556, cur score = 0.00292666,
worse accepted = 17.25%
Gen #445: temp = 0.000058, best score = 0.00282556, cur score = 0.00285919,
worse accepted = 18.25%
Gen #446: temp = 0.000057, best score = 0.00282556, cur score = 0.00298172,
worse accepted = 18.58%
Gen #447: temp = 0.000057, best score = 0.00282556, cur score = 0.00332136,
worse accepted = 17.97%
Gen #448: temp = 0.000056, best score = 0.00282556, cur score = 0.00299634,
worse accepted = 17.73%
Gen #449: temp = 0.000055, best score = 0.00282556, cur score = 0.00312638,
worse accepted = 17.21%
Gen #450: temp = 0.000055, best score = 0.00282556, cur score = 0.00295629,
worse accepted = 17.27%
Gen #451: temp = 0.000054, best score = 0.00282556, cur score = 0.00303574,
worse accepted = 17.06%
Gen #452: temp = 0.000054, best score = 0.00282556, cur score = 0.00290181,
worse accepted = 16.54%
Gen #453: temp = 0.000053, best score = 0.00282556, cur score = 0.00322533,
worse accepted = 16.72%
Gen #454: temp = 0.000053, best score = 0.00282556, cur score = 0.00291061,
worse accepted = 16.39%
Gen #455: temp = 0.000052, best score = 0.00282556, cur score = 0.00294362,
worse accepted = 16.14%
Gen #456: temp = 0.000052, best score = 0.00282556, cur score = 0.00327130,
worse accepted = 16.89%
Gen #457: temp = 0.000051, best score = 0.00282556, cur score = 0.00288967,
worse accepted = 15.69%
Gen #458: temp = 0.000051, best score = 0.00282556, cur score = 0.00292010,
worse accepted = 16.49%
Gen #459: temp = 0.000050, best score = 0.00282556, cur score = 0.00296243,
worse accepted = 15.92%
Gen #460: temp = 0.000050, best score = 0.00282556, cur score = 0.00316295,
worse accepted = 16.04%
Gen #461: temp = 0.000049, best score = 0.00282556, cur score = 0.00284091,
worse accepted = 15.61%
Gen #462: temp = 0.000049, best score = 0.00282556, cur score = 0.00292234,
worse accepted = 15.22%
Gen #463: temp = 0.000048, best score = 0.00282556, cur score = 0.00322540,
worse accepted = 16.00%
Gen #464: temp = 0.000048, best score = 0.00282556, cur score = 0.00306065,
worse accepted = 15.11%
Gen #465: temp = 0.000047, best score = 0.00282556, cur score = 0.00296083,
worse accepted = 14.84%
Gen #466: temp = 0.000047, best score = 0.00282492, cur score = 0.00291101,

worse accepted = 14.95%
Gen #467: temp = 0.000046, best score = 0.00282492, cur score = 0.00291540,
worse accepted = 15.01%
Gen #468: temp = 0.000046, best score = 0.00282492, cur score = 0.00311399,
worse accepted = 14.53%
Gen #469: temp = 0.000045, best score = 0.00282492, cur score = 0.00303356,
worse accepted = 14.18%
Gen #470: temp = 0.000045, best score = 0.00282492, cur score = 0.00313042,
worse accepted = 13.77%
Gen #471: temp = 0.000044, best score = 0.00282492, cur score = 0.00293487,
worse accepted = 14.17%
Gen #472: temp = 0.000044, best score = 0.00282492, cur score = 0.00294668,
worse accepted = 13.81%
Gen #473: temp = 0.000044, best score = 0.00282492, cur score = 0.00286321,
worse accepted = 13.19%
Gen #474: temp = 0.000043, best score = 0.00282492, cur score = 0.00301880,
worse accepted = 13.56%
Gen #475: temp = 0.000043, best score = 0.00282492, cur score = 0.00295157,
worse accepted = 13.44%
Gen #476: temp = 0.000042, best score = 0.00282492, cur score = 0.00298973,
worse accepted = 13.16%
Gen #477: temp = 0.000042, best score = 0.00282492, cur score = 0.00291549,
worse accepted = 12.04%
Gen #478: temp = 0.000041, best score = 0.00282492, cur score = 0.00303552,
worse accepted = 12.95%
Gen #479: temp = 0.000041, best score = 0.00282492, cur score = 0.00287049,
worse accepted = 12.37%
Gen #480: temp = 0.000041, best score = 0.00282492, cur score = 0.00289082,
worse accepted = 12.75%
Gen #481: temp = 0.000040, best score = 0.00282492, cur score = 0.00298204,
worse accepted = 12.38%
Gen #482: temp = 0.000040, best score = 0.00282492, cur score = 0.00287199,
worse accepted = 11.84%
Gen #483: temp = 0.000039, best score = 0.00282492, cur score = 0.00299108,
worse accepted = 11.86%
Gen #484: temp = 0.000039, best score = 0.00282492, cur score = 0.00289280,
worse accepted = 12.33%
Gen #485: temp = 0.000039, best score = 0.00282492, cur score = 0.00292036,
worse accepted = 11.99%
Gen #486: temp = 0.000038, best score = 0.00282492, cur score = 0.00287639,
worse accepted = 11.64%
Gen #487: temp = 0.000038, best score = 0.00282492, cur score = 0.00309468,
worse accepted = 12.00%
Gen #488: temp = 0.000037, best score = 0.00282492, cur score = 0.00287079,
worse accepted = 11.05%
Gen #489: temp = 0.000037, best score = 0.00282492, cur score = 0.00299664,
worse accepted = 11.35%
Gen #490: temp = 0.000037, best score = 0.00282320, cur score = 0.00298653,

worse accepted = 10.35%
Gen #491: temp = 0.000036, best score = 0.00282320, cur score = 0.00295028,
worse accepted = 11.27%
Gen #492: temp = 0.000036, best score = 0.00282320, cur score = 0.00296752,
worse accepted = 11.14%
Gen #493: temp = 0.000036, best score = 0.00282320, cur score = 0.00306658,
worse accepted = 9.93%
Gen #494: temp = 0.000035, best score = 0.00282320, cur score = 0.00289114,
worse accepted = 10.72%
Gen #495: temp = 0.000035, best score = 0.00282320, cur score = 0.00299269,
worse accepted = 10.14%
Gen #496: temp = 0.000035, best score = 0.00282320, cur score = 0.00289894,
worse accepted = 9.27%
Gen #497: temp = 0.000034, best score = 0.00282320, cur score = 0.00304243,
worse accepted = 10.06%
Gen #498: temp = 0.000034, best score = 0.00282320, cur score = 0.00283453,
worse accepted = 9.77%
Gen #499: temp = 0.000034, best score = 0.00282320, cur score = 0.00288205,
worse accepted = 10.05%
Gen #500: temp = 0.000033, best score = 0.00282320, cur score = 0.00292130,
worse accepted = 9.88%
Gen #501: temp = 0.000033, best score = 0.00282320, cur score = 0.00287234,
worse accepted = 9.62%
Gen #502: temp = 0.000033, best score = 0.00282320, cur score = 0.00285388,
worse accepted = 9.60%
Gen #503: temp = 0.000032, best score = 0.00282320, cur score = 0.00306257,
worse accepted = 9.69%
Gen #504: temp = 0.000032, best score = 0.00282320, cur score = 0.00296436,
worse accepted = 9.22%
Gen #505: temp = 0.000032, best score = 0.00282320, cur score = 0.00298279,
worse accepted = 8.55%
Gen #506: temp = 0.000031, best score = 0.00282320, cur score = 0.00290317,
worse accepted = 8.64%
Gen #507: temp = 0.000031, best score = 0.00282320, cur score = 0.00288044,
worse accepted = 8.91%
Gen #508: temp = 0.000031, best score = 0.00282320, cur score = 0.00290001,
worse accepted = 8.47%
Gen #509: temp = 0.000030, best score = 0.00282320, cur score = 0.00287097,
worse accepted = 8.45%
Gen #510: temp = 0.000030, best score = 0.00282320, cur score = 0.00300636,
worse accepted = 9.15%
Gen #511: temp = 0.000030, best score = 0.00282320, cur score = 0.00296964,
worse accepted = 8.33%
Gen #512: temp = 0.000029, best score = 0.00282320, cur score = 0.00295313,
worse accepted = 8.25%
Gen #513: temp = 0.000029, best score = 0.00282320, cur score = 0.00304380,
worse accepted = 8.54%
Gen #514: temp = 0.000029, best score = 0.00282320, cur score = 0.00288017,

worse accepted = 7.60%
Gen #515: temp = 0.000029, best score = 0.00282320, cur score = 0.00287417,
worse accepted = 8.04%
Gen #516: temp = 0.000028, best score = 0.00282320, cur score = 0.00301384,
worse accepted = 7.62%
Gen #517: temp = 0.000028, best score = 0.00282320, cur score = 0.00292053,
worse accepted = 8.39%
Gen #518: temp = 0.000028, best score = 0.00282320, cur score = 0.00287697,
worse accepted = 7.22%
Gen #519: temp = 0.000027, best score = 0.00282320, cur score = 0.00287360,
worse accepted = 7.02%
Gen #520: temp = 0.000027, best score = 0.00282320, cur score = 0.00293822,
worse accepted = 7.08%
Gen #521: temp = 0.000027, best score = 0.00282320, cur score = 0.00290074,
worse accepted = 7.20%
Gen #522: temp = 0.000027, best score = 0.00282320, cur score = 0.00287031,
worse accepted = 7.23%
Gen #523: temp = 0.000026, best score = 0.00282320, cur score = 0.00286727,
worse accepted = 6.43%
Gen #524: temp = 0.000026, best score = 0.00282320, cur score = 0.00297532,
worse accepted = 6.77%
Gen #525: temp = 0.000026, best score = 0.00282320, cur score = 0.00289726,
worse accepted = 7.14%
Gen #526: temp = 0.000026, best score = 0.00282320, cur score = 0.00296059,
worse accepted = 6.42%
Gen #527: temp = 0.000025, best score = 0.00282320, cur score = 0.00287109,
worse accepted = 6.48%
Gen #528: temp = 0.000025, best score = 0.00282320, cur score = 0.00285977,
worse accepted = 6.66%
Gen #529: temp = 0.000025, best score = 0.00282320, cur score = 0.00284162,
worse accepted = 5.96%
Gen #530: temp = 0.000025, best score = 0.00282320, cur score = 0.00297421,
worse accepted = 6.30%
Gen #531: temp = 0.000024, best score = 0.00282320, cur score = 0.00290390,
worse accepted = 6.02%
Gen #532: temp = 0.000024, best score = 0.00282320, cur score = 0.00285882,
worse accepted = 5.83%
Gen #533: temp = 0.000024, best score = 0.00282231, cur score = 0.00291209,
worse accepted = 6.25%
Gen #534: temp = 0.000024, best score = 0.00282231, cur score = 0.00293422,
worse accepted = 5.62%
Gen #535: temp = 0.000023, best score = 0.00282231, cur score = 0.00286678,
worse accepted = 6.42%
Gen #536: temp = 0.000023, best score = 0.00282231, cur score = 0.00290767,
worse accepted = 5.90%
Gen #537: temp = 0.000023, best score = 0.00282231, cur score = 0.00286369,
worse accepted = 5.69%
Gen #538: temp = 0.000023, best score = 0.00282231, cur score = 0.00297661,

worse accepted = 5.43%
Gen #539: temp = 0.000022, best score = 0.00282231, cur score = 0.00283628,
worse accepted = 5.24%
Gen #540: temp = 0.000022, best score = 0.00282231, cur score = 0.00285862,
worse accepted = 5.38%
Gen #541: temp = 0.000022, best score = 0.00282231, cur score = 0.00284664,
worse accepted = 5.38%
Gen #542: temp = 0.000022, best score = 0.00282231, cur score = 0.00282867,
worse accepted = 5.29%
Gen #543: temp = 0.000022, best score = 0.00282231, cur score = 0.00293917,
worse accepted = 4.91%
Gen #544: temp = 0.000021, best score = 0.00282231, cur score = 0.00286622,
worse accepted = 5.08%
Gen #545: temp = 0.000021, best score = 0.00282231, cur score = 0.00291187,
worse accepted = 4.95%
Gen #546: temp = 0.000021, best score = 0.00282231, cur score = 0.00289669,
worse accepted = 4.57%
Gen #547: temp = 0.000021, best score = 0.00282231, cur score = 0.00286564,
worse accepted = 4.40%
Gen #548: temp = 0.000020, best score = 0.00282231, cur score = 0.00284347,
worse accepted = 4.90%
Gen #549: temp = 0.000020, best score = 0.00282231, cur score = 0.00290852,
worse accepted = 4.68%
Gen #550: temp = 0.000020, best score = 0.00282231, cur score = 0.00284862,
worse accepted = 4.12%
Gen #551: temp = 0.000020, best score = 0.00282231, cur score = 0.00291693,
worse accepted = 4.43%
Gen #552: temp = 0.000020, best score = 0.00282231, cur score = 0.00286664,
worse accepted = 4.67%
Gen #553: temp = 0.000019, best score = 0.00282231, cur score = 0.00285513,
worse accepted = 4.22%
Gen #554: temp = 0.000019, best score = 0.00282231, cur score = 0.00292020,
worse accepted = 4.15%
Gen #555: temp = 0.000019, best score = 0.00282231, cur score = 0.00287426,
worse accepted = 4.10%
Gen #556: temp = 0.000019, best score = 0.00282231, cur score = 0.00294818,
worse accepted = 3.91%
Gen #557: temp = 0.000019, best score = 0.00282231, cur score = 0.00289847,
worse accepted = 4.11%
Gen #558: temp = 0.000019, best score = 0.00282231, cur score = 0.00287026,
worse accepted = 4.04%
Gen #559: temp = 0.000018, best score = 0.00282231, cur score = 0.00293751,
worse accepted = 3.85%
Gen #560: temp = 0.000018, best score = 0.00282231, cur score = 0.00286273,
worse accepted = 3.66%
Gen #561: temp = 0.000018, best score = 0.00282231, cur score = 0.00285494,
worse accepted = 3.58%
Gen #562: temp = 0.000018, best score = 0.00282231, cur score = 0.00284669,

worse accepted = 3.49%
Gen #563: temp = 0.000018, best score = 0.00282231, cur score = 0.00288710,
worse accepted = 3.59%
Gen #564: temp = 0.000017, best score = 0.00282231, cur score = 0.00289103,
worse accepted = 3.26%
Gen #565: temp = 0.000017, best score = 0.00282231, cur score = 0.00286608,
worse accepted = 3.40%
Gen #566: temp = 0.000017, best score = 0.00282231, cur score = 0.00289250,
worse accepted = 3.02%
Gen #567: temp = 0.000017, best score = 0.00282231, cur score = 0.00288067,
worse accepted = 3.46%
Gen #568: temp = 0.000017, best score = 0.00282231, cur score = 0.00286169,
worse accepted = 3.26%
Gen #569: temp = 0.000017, best score = 0.00282231, cur score = 0.00286652,
worse accepted = 2.94%
Gen #570: temp = 0.000016, best score = 0.00282231, cur score = 0.00288655,
worse accepted = 3.28%
Gen #571: temp = 0.000016, best score = 0.00282231, cur score = 0.00287256,
worse accepted = 3.36%
Gen #572: temp = 0.000016, best score = 0.00282231, cur score = 0.00285401,
worse accepted = 2.50%
Gen #573: temp = 0.000016, best score = 0.00282231, cur score = 0.00286662,
worse accepted = 2.73%
Gen #574: temp = 0.000016, best score = 0.00282231, cur score = 0.00284277,
worse accepted = 3.08%
Gen #575: temp = 0.000016, best score = 0.00282231, cur score = 0.00284713,
worse accepted = 2.65%
Gen #576: temp = 0.000015, best score = 0.00282231, cur score = 0.00287681,
worse accepted = 2.72%
Gen #577: temp = 0.000015, best score = 0.00282231, cur score = 0.00293999,
worse accepted = 2.60%
Gen #578: temp = 0.000015, best score = 0.00282231, cur score = 0.00283817,
worse accepted = 2.44%
Gen #579: temp = 0.000015, best score = 0.00282231, cur score = 0.00283437,
worse accepted = 2.60%
Gen #580: temp = 0.000015, best score = 0.00282231, cur score = 0.00286109,
worse accepted = 2.70%
Gen #581: temp = 0.000015, best score = 0.00282231, cur score = 0.00286375,
worse accepted = 2.53%
Gen #582: temp = 0.000015, best score = 0.00282231, cur score = 0.00286963,
worse accepted = 2.94%
Gen #583: temp = 0.000014, best score = 0.00282168, cur score = 0.00285223,
worse accepted = 2.27%
Gen #584: temp = 0.000014, best score = 0.00282168, cur score = 0.00282854,
worse accepted = 2.22%
Gen #585: temp = 0.000014, best score = 0.00282168, cur score = 0.00288476,
worse accepted = 2.53%
Gen #586: temp = 0.000014, best score = 0.00282168, cur score = 0.00288942,

worse accepted = 2.47%
Gen #587: temp = 0.000014, best score = 0.00282168, cur score = 0.00288450,
worse accepted = 2.54%
Gen #588: temp = 0.000014, best score = 0.00282168, cur score = 0.00287429,
worse accepted = 2.41%
Gen #589: temp = 0.000014, best score = 0.00282168, cur score = 0.00292356,
worse accepted = 2.17%
Gen #590: temp = 0.000013, best score = 0.00282168, cur score = 0.00283505,
worse accepted = 2.22%
Gen #591: temp = 0.000013, best score = 0.00282168, cur score = 0.00288373,
worse accepted = 1.96%
Gen #592: temp = 0.000013, best score = 0.00282168, cur score = 0.00284636,
worse accepted = 2.18%
Gen #593: temp = 0.000013, best score = 0.00282168, cur score = 0.00284110,
worse accepted = 2.10%
Gen #594: temp = 0.000013, best score = 0.00282168, cur score = 0.00285115,
worse accepted = 1.85%
Gen #595: temp = 0.000013, best score = 0.00282168, cur score = 0.00287261,
worse accepted = 2.03%
Gen #596: temp = 0.000013, best score = 0.00282168, cur score = 0.00283665,
worse accepted = 1.70%
Gen #597: temp = 0.000013, best score = 0.00282168, cur score = 0.00282842,
worse accepted = 1.48%
Gen #598: temp = 0.000012, best score = 0.00282168, cur score = 0.00286959,
worse accepted = 1.81%
Gen #599: temp = 0.000012, best score = 0.00282168, cur score = 0.00292255,
worse accepted = 1.82%
Gen #600: temp = 0.000012, best score = 0.00282168, cur score = 0.00286458,
worse accepted = 1.97%
Gen #601: temp = 0.000012, best score = 0.00282168, cur score = 0.00285806,
worse accepted = 1.75%
Gen #602: temp = 0.000012, best score = 0.00282168, cur score = 0.00289985,
worse accepted = 1.87%
Gen #603: temp = 0.000012, best score = 0.00282168, cur score = 0.00285771,
worse accepted = 1.40%
Gen #604: temp = 0.000012, best score = 0.00282168, cur score = 0.00287463,
worse accepted = 1.62%
Gen #605: temp = 0.000012, best score = 0.00282168, cur score = 0.00287268,
worse accepted = 1.82%
Gen #606: temp = 0.000011, best score = 0.00282168, cur score = 0.00288400,
worse accepted = 1.64%
Gen #607: temp = 0.000011, best score = 0.00282168, cur score = 0.00284912,
worse accepted = 1.66%
Gen #608: temp = 0.000011, best score = 0.00282168, cur score = 0.00284474,
worse accepted = 1.33%
Gen #609: temp = 0.000011, best score = 0.00282168, cur score = 0.00285453,
worse accepted = 1.57%
Gen #610: temp = 0.000011, best score = 0.00282168, cur score = 0.00286599,

worse accepted = 1.26%
Gen #611: temp = 0.000011, best score = 0.00282168, cur score = 0.00283290,
worse accepted = 1.22%
Gen #612: temp = 0.000011, best score = 0.00282168, cur score = 0.00283536,
worse accepted = 1.29%
Gen #613: temp = 0.000011, best score = 0.00282168, cur score = 0.00288671,
worse accepted = 1.15%
Gen #614: temp = 0.000011, best score = 0.00282168, cur score = 0.00288387,
worse accepted = 1.48%
Gen #615: temp = 0.000010, best score = 0.00282168, cur score = 0.00283670,
worse accepted = 1.44%
Gen #616: temp = 0.000010, best score = 0.00282168, cur score = 0.00287045,
worse accepted = 1.31%
Gen #617: temp = 0.000010, best score = 0.00282168, cur score = 0.00286184,
worse accepted = 1.26%
Gen #618: temp = 0.000010, best score = 0.00282168, cur score = 0.00283769,
worse accepted = 1.20%
Gen #619: temp = 0.000010, best score = 0.00282168, cur score = 0.00284151,
worse accepted = 1.38%
Gen #620: temp = 0.000010, best score = 0.00282168, cur score = 0.00285230,
worse accepted = 1.14%
Gen #621: temp = 0.000010, best score = 0.00282168, cur score = 0.00282309,
worse accepted = 1.09%
Gen #622: temp = 0.000010, best score = 0.00282168, cur score = 0.00288909,
worse accepted = 0.95%
Gen #623: temp = 0.000010, best score = 0.00282168, cur score = 0.00283045,
worse accepted = 0.92%
Gen #624: temp = 0.000010, best score = 0.00282168, cur score = 0.00283257,
worse accepted = 1.18%
Gen #625: temp = 0.000009, best score = 0.00282168, cur score = 0.00282510,
worse accepted = 1.08%
Gen #626: temp = 0.000009, best score = 0.00282168, cur score = 0.00285615,
worse accepted = 0.94%
Gen #627: temp = 0.000009, best score = 0.00282168, cur score = 0.00283627,
worse accepted = 0.91%
Gen #628: temp = 0.000009, best score = 0.00282168, cur score = 0.00283560,
worse accepted = 0.94%
Gen #629: temp = 0.000009, best score = 0.00282168, cur score = 0.00285417,
worse accepted = 1.10%
Gen #630: temp = 0.000009, best score = 0.00282168, cur score = 0.00287550,
worse accepted = 0.78%
Gen #631: temp = 0.000009, best score = 0.00282168, cur score = 0.00285785,
worse accepted = 0.99%
Gen #632: temp = 0.000009, best score = 0.00282168, cur score = 0.00283947,
worse accepted = 1.17%
Gen #633: temp = 0.000009, best score = 0.00282168, cur score = 0.00286601,
worse accepted = 0.96%
Gen #634: temp = 0.000009, best score = 0.00282168, cur score = 0.00284268,

worse accepted = 0.75%
Gen #635: temp = 0.000009, best score = 0.00282168, cur score = 0.00285421,
worse accepted = 0.74%
Gen #636: temp = 0.000008, best score = 0.00282168, cur score = 0.00283557,
worse accepted = 0.78%
Gen #637: temp = 0.000008, best score = 0.00282168, cur score = 0.00285569,
worse accepted = 0.89%
Gen #638: temp = 0.000008, best score = 0.00282168, cur score = 0.00285324,
worse accepted = 0.69%
Gen #639: temp = 0.000008, best score = 0.00282168, cur score = 0.00282452,
worse accepted = 0.72%
Gen #640: temp = 0.000008, best score = 0.00282168, cur score = 0.00282839,
worse accepted = 0.89%
Gen #641: temp = 0.000008, best score = 0.00282168, cur score = 0.00283038,
worse accepted = 0.58%
Gen #642: temp = 0.000008, best score = 0.00282168, cur score = 0.00286527,
worse accepted = 0.75%
Gen #643: temp = 0.000008, best score = 0.00282168, cur score = 0.00289606,
worse accepted = 0.82%
Gen #644: temp = 0.000008, best score = 0.00282168, cur score = 0.00288450,
worse accepted = 0.67%
Gen #645: temp = 0.000008, best score = 0.00282168, cur score = 0.00286154,
worse accepted = 0.68%
Gen #646: temp = 0.000008, best score = 0.00282168, cur score = 0.00288060,
worse accepted = 0.49%
Gen #647: temp = 0.000008, best score = 0.00282168, cur score = 0.00283031,
worse accepted = 0.54%
Gen #648: temp = 0.000007, best score = 0.00282168, cur score = 0.00285125,
worse accepted = 0.57%
Gen #649: temp = 0.000007, best score = 0.00282168, cur score = 0.00283961,
worse accepted = 0.47%
Gen #650: temp = 0.000007, best score = 0.00282168, cur score = 0.00285281,
worse accepted = 0.91%
Gen #651: temp = 0.000007, best score = 0.00282168, cur score = 0.00285664,
worse accepted = 0.68%
Gen #652: temp = 0.000007, best score = 0.00282168, cur score = 0.00284894,
worse accepted = 0.31%
Gen #653: temp = 0.000007, best score = 0.00282168, cur score = 0.00284162,
worse accepted = 0.40%
Gen #654: temp = 0.000007, best score = 0.00282168, cur score = 0.00284604,
worse accepted = 0.46%
Gen #655: temp = 0.000007, best score = 0.00282168, cur score = 0.00284329,
worse accepted = 0.42%
Gen #656: temp = 0.000007, best score = 0.00282168, cur score = 0.00284366,
worse accepted = 0.52%
Gen #657: temp = 0.000007, best score = 0.00282168, cur score = 0.00283446,
worse accepted = 0.41%
Gen #658: temp = 0.000007, best score = 0.00282168, cur score = 0.00285603,

worse accepted = 0.47%
Gen #659: temp = 0.000007, best score = 0.00282168, cur score = 0.00283008,
worse accepted = 0.59%
Gen #660: temp = 0.000007, best score = 0.00282168, cur score = 0.00283273,
worse accepted = 0.32%
Gen #661: temp = 0.000007, best score = 0.00282168, cur score = 0.00283074,
worse accepted = 0.42%
Gen #662: temp = 0.000007, best score = 0.00282168, cur score = 0.00283287,
worse accepted = 0.43%
Gen #663: temp = 0.000006, best score = 0.00282168, cur score = 0.00284712,
worse accepted = 0.39%
Gen #664: temp = 0.000006, best score = 0.00282168, cur score = 0.00283912,
worse accepted = 0.38%
Gen #665: temp = 0.000006, best score = 0.00282168, cur score = 0.00283708,
worse accepted = 0.37%
Gen #666: temp = 0.000006, best score = 0.00282168, cur score = 0.00284393,
worse accepted = 0.37%
Gen #667: temp = 0.000006, best score = 0.00282168, cur score = 0.00283818,
worse accepted = 0.39%
Gen #668: temp = 0.000006, best score = 0.00282168, cur score = 0.00283263,
worse accepted = 0.39%
Gen #669: temp = 0.000006, best score = 0.00282168, cur score = 0.00283892,
worse accepted = 0.28%
Gen #670: temp = 0.000006, best score = 0.00282168, cur score = 0.00285850,
worse accepted = 0.48%
Gen #671: temp = 0.000006, best score = 0.00282168, cur score = 0.00283366,
worse accepted = 0.43%
Gen #672: temp = 0.000006, best score = 0.00282168, cur score = 0.00282350,
worse accepted = 0.25%
Gen #673: temp = 0.000006, best score = 0.00282168, cur score = 0.00283557,
worse accepted = 0.23%
Gen #674: temp = 0.000006, best score = 0.00282168, cur score = 0.00283243,
worse accepted = 0.23%
Gen #675: temp = 0.000006, best score = 0.00282168, cur score = 0.00282989,
worse accepted = 0.28%
Gen #676: temp = 0.000006, best score = 0.00282168, cur score = 0.00284754,
worse accepted = 0.36%
Gen #677: temp = 0.000006, best score = 0.00282168, cur score = 0.00283154,
worse accepted = 0.23%
Gen #678: temp = 0.000006, best score = 0.00282168, cur score = 0.00283819,
worse accepted = 0.27%
Gen #679: temp = 0.000005, best score = 0.00282168, cur score = 0.00283323,
worse accepted = 0.23%
Gen #680: temp = 0.000005, best score = 0.00282168, cur score = 0.00283834,
worse accepted = 0.20%
Gen #681: temp = 0.000005, best score = 0.00282168, cur score = 0.00282380,
worse accepted = 0.09%
Gen #682: temp = 0.000005, best score = 0.00282168, cur score = 0.00283645,

worse accepted = 0.28%
Gen #683: temp = 0.000005, best score = 0.00282168, cur score = 0.00285348,
worse accepted = 0.28%
Gen #684: temp = 0.000005, best score = 0.00282168, cur score = 0.00283028,
worse accepted = 0.34%
Gen #685: temp = 0.000005, best score = 0.00282168, cur score = 0.00283026,
worse accepted = 0.27%
Gen #686: temp = 0.000005, best score = 0.00282168, cur score = 0.00283324,
worse accepted = 0.24%
Gen #687: temp = 0.000005, best score = 0.00282168, cur score = 0.00283329,
worse accepted = 0.27%
Gen #688: temp = 0.000005, best score = 0.00282168, cur score = 0.00282758,
worse accepted = 0.13%
Gen #689: temp = 0.000005, best score = 0.00282168, cur score = 0.00283559,
worse accepted = 0.31%
Gen #690: temp = 0.000005, best score = 0.00282168, cur score = 0.00283173,
worse accepted = 0.13%
Gen #691: temp = 0.000005, best score = 0.00282168, cur score = 0.00283103,
worse accepted = 0.28%
Gen #692: temp = 0.000005, best score = 0.00282168, cur score = 0.00282355,
worse accepted = 0.05%
Gen #693: temp = 0.000005, best score = 0.00282168, cur score = 0.00283024,
worse accepted = 0.15%
Gen #694: temp = 0.000005, best score = 0.00282168, cur score = 0.00283071,
worse accepted = 0.04%
Gen #695: temp = 0.000005, best score = 0.00282168, cur score = 0.00284294,
worse accepted = 0.24%
Gen #696: temp = 0.000005, best score = 0.00282168, cur score = 0.00282300,
worse accepted = 0.14%
Gen #697: temp = 0.000005, best score = 0.00282168, cur score = 0.00283155,
worse accepted = 0.10%
Gen #698: temp = 0.000005, best score = 0.00282168, cur score = 0.00284965,
worse accepted = 0.17%
Gen #699: temp = 0.000004, best score = 0.00282168, cur score = 0.00282998,
worse accepted = 0.11%
Gen #700: temp = 0.000004, best score = 0.00282168, cur score = 0.00285850,
worse accepted = 0.20%
Gen #701: temp = 0.000004, best score = 0.00282168, cur score = 0.00285077,
worse accepted = 0.11%
Gen #702: temp = 0.000004, best score = 0.00282168, cur score = 0.00282489,
worse accepted = 0.08%
Gen #703: temp = 0.000004, best score = 0.00282168, cur score = 0.00283082,
worse accepted = 0.13%
Gen #704: temp = 0.000004, best score = 0.00282168, cur score = 0.00283036,
worse accepted = 0.06%
Gen #705: temp = 0.000004, best score = 0.00282168, cur score = 0.00285235,
worse accepted = 0.09%
Gen #706: temp = 0.000004, best score = 0.00282168, cur score = 0.00282860,

worse accepted = 0.18%
Gen #707: temp = 0.000004, best score = 0.00282168, cur score = 0.00283043,
worse accepted = 0.14%
Gen #708: temp = 0.000004, best score = 0.00282168, cur score = 0.00282930,
worse accepted = 0.07%
Gen #709: temp = 0.000004, best score = 0.00282168, cur score = 0.00283275,
worse accepted = 0.21%
Gen #710: temp = 0.000004, best score = 0.00282168, cur score = 0.00282586,
worse accepted = 0.06%
Gen #711: temp = 0.000004, best score = 0.00282168, cur score = 0.00283306,
worse accepted = 0.06%
Gen #712: temp = 0.000004, best score = 0.00282168, cur score = 0.00283158,
worse accepted = 0.09%
Gen #713: temp = 0.000004, best score = 0.00282168, cur score = 0.00282929,
worse accepted = 0.04%
Gen #714: temp = 0.000004, best score = 0.00282168, cur score = 0.00282633,
worse accepted = 0.04%
Gen #715: temp = 0.000004, best score = 0.00282168, cur score = 0.00282955,
worse accepted = 0.05%
Gen #716: temp = 0.000004, best score = 0.00282168, cur score = 0.00282794,
worse accepted = 0.14%
Gen #717: temp = 0.000004, best score = 0.00282168, cur score = 0.00283068,
worse accepted = 0.09%
Gen #718: temp = 0.000004, best score = 0.00282168, cur score = 0.00286015,
worse accepted = 0.27%
Gen #719: temp = 0.000004, best score = 0.00282168, cur score = 0.00282880,
worse accepted = 0.05%
Gen #720: temp = 0.000004, best score = 0.00282168, cur score = 0.00282396,
worse accepted = 0.07%
Gen #721: temp = 0.000004, best score = 0.00282168, cur score = 0.00282803,
worse accepted = 0.10%
Gen #722: temp = 0.000004, best score = 0.00282168, cur score = 0.00282641,
worse accepted = 0.07%
Gen #723: temp = 0.000004, best score = 0.00282168, cur score = 0.00282645,
worse accepted = 0.11%
Gen #724: temp = 0.000003, best score = 0.00282168, cur score = 0.00282932,
worse accepted = 0.06%
Gen #725: temp = 0.000003, best score = 0.00282168, cur score = 0.00284706,
worse accepted = 0.04%
Gen #726: temp = 0.000003, best score = 0.00282168, cur score = 0.00283858,
worse accepted = 0.20%
Gen #727: temp = 0.000003, best score = 0.00282168, cur score = 0.00283060,
worse accepted = 0.03%
Gen #728: temp = 0.000003, best score = 0.00282168, cur score = 0.00283359,
worse accepted = 0.04%
Gen #729: temp = 0.000003, best score = 0.00282168, cur score = 0.00283431,
worse accepted = 0.05%
Gen #730: temp = 0.000003, best score = 0.00282168, cur score = 0.00284094,

worse accepted = 0.07%
Gen #731: temp = 0.000003, best score = 0.00282168, cur score = 0.00282715,
worse accepted = 0.06%
Gen #732: temp = 0.000003, best score = 0.00282168, cur score = 0.00282566,
worse accepted = 0.06%
Gen #733: temp = 0.000003, best score = 0.00282168, cur score = 0.00283715,
worse accepted = 0.04%
Gen #734: temp = 0.000003, best score = 0.00282168, cur score = 0.00282225,
worse accepted = 0.01%
Gen #735: temp = 0.000003, best score = 0.00282168, cur score = 0.00283012,
worse accepted = 0.02%
Gen #736: temp = 0.000003, best score = 0.00282168, cur score = 0.00283224,
worse accepted = 0.16%
Gen #737: temp = 0.000003, best score = 0.00282168, cur score = 0.00283311,
worse accepted = 0.06%
Gen #738: temp = 0.000003, best score = 0.00282168, cur score = 0.00282341,
worse accepted = 0.12%
Gen #739: temp = 0.000003, best score = 0.00282160, cur score = 0.00282160,
worse accepted = 0.01%
Gen #740: temp = 0.000003, best score = 0.00282160, cur score = 0.00282160,
worse accepted = 0.00%
Gen #741: temp = 0.000003, best score = 0.00282160, cur score = 0.00282643,
worse accepted = 0.02%
Gen #742: temp = 0.000003, best score = 0.00282160, cur score = 0.00282760,
worse accepted = 0.11%
Gen #743: temp = 0.000003, best score = 0.00282160, cur score = 0.00282518,
worse accepted = 0.02%
Gen #744: temp = 0.000003, best score = 0.00282160, cur score = 0.00282538,
worse accepted = 0.01%
Gen #745: temp = 0.000003, best score = 0.00282160, cur score = 0.00282236,
worse accepted = 0.01%
Gen #746: temp = 0.000003, best score = 0.00282160, cur score = 0.00282236,
worse accepted = 0.00%
Gen #747: temp = 0.000003, best score = 0.00282160, cur score = 0.00282909,
worse accepted = 0.01%
Gen #748: temp = 0.000003, best score = 0.00282160, cur score = 0.00282616,
worse accepted = 0.02%
Gen #749: temp = 0.000003, best score = 0.00282160, cur score = 0.00282814,
worse accepted = 0.01%
Gen #750: temp = 0.000003, best score = 0.00282160, cur score = 0.00282359,
worse accepted = 0.02%
Gen #751: temp = 0.000003, best score = 0.00282160, cur score = 0.00283566,
worse accepted = 0.01%
Gen #752: temp = 0.000003, best score = 0.00282160, cur score = 0.00282903,
worse accepted = 0.08%
Gen #753: temp = 0.000003, best score = 0.00282160, cur score = 0.00282540,
worse accepted = 0.05%
Gen #754: temp = 0.000003, best score = 0.00282160, cur score = 0.00283137,

worse accepted = 0.05%
Gen #755: temp = 0.000003, best score = 0.00282160, cur score = 0.00282759,
worse accepted = 0.07%
Gen #756: temp = 0.000003, best score = 0.00282160, cur score = 0.00283174,
worse accepted = 0.04%
Gen #757: temp = 0.000003, best score = 0.00282160, cur score = 0.00282740,
worse accepted = 0.03%
Gen #758: temp = 0.000002, best score = 0.00282160, cur score = 0.00282649,
worse accepted = 0.04%
Gen #759: temp = 0.000002, best score = 0.00282160, cur score = 0.00282204,
worse accepted = 0.02%
Gen #760: temp = 0.000002, best score = 0.00282160, cur score = 0.00283166,
worse accepted = 0.06%
Gen #761: temp = 0.000002, best score = 0.00282160, cur score = 0.00282797,
worse accepted = 0.02%
Gen #762: temp = 0.000002, best score = 0.00282160, cur score = 0.00282554,
worse accepted = 0.01%
Gen #763: temp = 0.000002, best score = 0.00282160, cur score = 0.00282554,
worse accepted = 0.00%
Gen #764: temp = 0.000002, best score = 0.00282160, cur score = 0.00282554,
worse accepted = 0.00%
Gen #765: temp = 0.000002, best score = 0.00282160, cur score = 0.00283130,
worse accepted = 0.03%
Gen #766: temp = 0.000002, best score = 0.00282160, cur score = 0.00282864,
worse accepted = 0.02%
Gen #767: temp = 0.000002, best score = 0.00282160, cur score = 0.00282530,
worse accepted = 0.01%
Gen #768: temp = 0.000002, best score = 0.00282160, cur score = 0.00282650,
worse accepted = 0.02%
Gen #769: temp = 0.000002, best score = 0.00282160, cur score = 0.00283918,
worse accepted = 0.04%
Gen #770: temp = 0.000002, best score = 0.00282160, cur score = 0.00282410,
worse accepted = 0.05%
Gen #771: temp = 0.000002, best score = 0.00282160, cur score = 0.00282309,
worse accepted = 0.04%
Gen #772: temp = 0.000002, best score = 0.00282160, cur score = 0.00283113,
worse accepted = 0.02%
Gen #773: temp = 0.000002, best score = 0.00282160, cur score = 0.00282824,
worse accepted = 0.06%
Gen #774: temp = 0.000002, best score = 0.00282160, cur score = 0.00282824,
worse accepted = 0.00%
Gen #775: temp = 0.000002, best score = 0.00282160, cur score = 0.00282241,
worse accepted = 0.00%
Gen #776: temp = 0.000002, best score = 0.00282160, cur score = 0.00282241,
worse accepted = 0.00%
Gen #777: temp = 0.000002, best score = 0.00282160, cur score = 0.00282586,
worse accepted = 0.02%
Gen #778: temp = 0.000002, best score = 0.00282160, cur score = 0.00282586,

worse accepted = 0.00%
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worse accepted = 0.01%
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worse accepted = 0.00%
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worse accepted = 0.09%
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worse accepted = 0.00%
Gen #785: temp = 0.000002, best score = 0.00282160, cur score = 0.00282321,
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Gen #787: temp = 0.000002, best score = 0.00282160, cur score = 0.00282424,
worse accepted = 0.01%
Gen #788: temp = 0.000002, best score = 0.00282160, cur score = 0.00282424,
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Gen #789: temp = 0.000002, best score = 0.00282160, cur score = 0.00282424,
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worse accepted = 0.01%
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worse accepted = 0.00%
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worse accepted = 0.00%
Gen #797: temp = 0.000002, best score = 0.00282105, cur score = 0.00282204,
worse accepted = 0.00%
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Gen #799: temp = 0.000002, best score = 0.00282105, cur score = 0.00283019,
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worse accepted = 0.04%
Gen #801: temp = 0.000002, best score = 0.00282105, cur score = 0.00282833,
worse accepted = 0.00%
Gen #802: temp = 0.000002, best score = 0.00282105, cur score = 0.00282944,

worse accepted = 0.02%
Gen #803: temp = 0.000002, best score = 0.00282105, cur score = 0.00282636,
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worse accepted = 0.00%
Gen #807: temp = 0.000002, best score = 0.00282105, cur score = 0.00283285,
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worse accepted = 0.01%
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Gen #813: temp = 0.000001, best score = 0.00282105, cur score = 0.00282868,
worse accepted = 0.03%
Gen #814: temp = 0.000001, best score = 0.00282105, cur score = 0.00282516,
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worse accepted = 0.00%
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Gen #833: temp = 0.000001, best score = 0.00282105, cur score = 0.00282182,
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worse accepted = 0.00%
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Gen #917: temp = 0.000001, best score = 0.00282105, cur score = 0.00282312,
worse accepted = 0.00%

[]: best_sol

[]: (2.0020773811812647, 0.2819354884901672, 0.050000764463366584)

[]: score(2.0020773811812647, 0.2819354884901672, 0.050000764463366584)

[]: 0.00282090536077111

```
[ ]: best_sol
score(*best_sol)
```

```
[ ]: 0.0028210512997475156
```

```
[ ]:
```

```
[ ]:
```

```
[ ]: sol = best_sol
print(g1(*sol), g2(*sol), g3(*sol), g4(*sol))
```

```
[ ]: score(*sol)
```

```
[ ]:
```

```
[ ]:
```

```
[ ]:
```

```
[ ]:
```

```
[ ]:
```

```
[ ]:
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```
[ ]:
```